State of Oregon
Department of Environmental Quality Memorandum

Date: Sept. 23, 2019

To: Environmental Quality Commission

From: Richard Whitman, Director

Subject: Joint Meeting Between EQC and the Board of Agriculture: Water Quality Roles and Responsibilities
Sept. 26-27, 2019, EQC meeting

Why this is important

The commission will meet jointly with the Oregon Board of Agriculture on Sept. 26, 2019. The two bodies have distinct roles and responsibilities related to Oregon's waters and water quality, and the joint meeting will focus on areas of intersection and coordination between the two bodies and the corresponding agencies.

EQC's Federal and State Clean Water Act Responsibilities

The Oregon Department of Environmental Quality is responsible for implementing the federal Clean Water Act in Oregon. The U.S. Environmental Protection Agency has delegated that responsibility to DEQ, and the Oregon legislature has directed DEQ to carry it out (ORS 468B.030; 468B.035).

DEQ implements the programs, rules and policies set by EQC. This includes the water quality standards and assessment program, which identifies what is necessary for Oregon's waterways to be fishable, swimmable and drinkable, permitting programs to control pollutant discharges to Oregon's waters so that standards are met, and the watershed health program, which includes developing plans for how to meet standards and assuring that those plans are implemented successfully.

Agriculture's Roles in Protecting Water Quality

The Oregon Board of Agriculture advises the Department of Agriculture on a full range of issues relating to agriculture in Oregon, including water quality. The Director of the Oregon Department of Agriculture is responsible for adopting rules and implementing those rules and other programs.

The Oregon legislature has provided that the Oregon Department of Agriculture may carry out certain programs involving water quality. These include the Confined Animal Feeding Operation (CAFO) program (ORS 468B.200 to 468B.230); pesticide registration and use (ORS chapter 634); and control of nonpoint sources of pollution from agricultural lands (ORS chapter 568). ODA also oversees soil and water conservation districts in Oregon, which along with watershed councils, lead much of the on-the-ground work on watershed health in Oregon.

Areas of Intersection and Coordination

A primary area of intersection and coordination between the two agencies is in the area of watershed health. When a waterway is not healthy for fish, or safe for swimming or drinking, DEQ is responsible for developing a plan that identifies what conditions need to change on the ground in order for those problems to be resolved. That plan, known as a Total Maximum Daily Load (TMDL), sets out responsibilities for Designated Management Agencies (DMAs), who are tasked with achieving particular targets or goals related to improving water quality.

ODA is the Designated Management Area for non-federal agricultural lands in Oregon, as the Oregon Department of Forestry is for non-federal forest lands. ODA, working with local partners, has developed Agricultural Water Quality Management Area Rules and Plans for each of 38 areas in Oregon, aligning roughly with major watershed boundaries. In basins where water quality standards are not being met, ODA relies on these plans and rules as a key tool in implementing their responsibilities as a DMA. ODA is the primary contact for the on-the-ground work with agricultural landowners and operators to make changes in riparian condition and other waterway functions needed to improve water quality. DEQ, ODA and others work to monitor water quality status and trends in these basins and, if trends are not moving as expected in a TMDL, DEQ and ODA work cooperatively to adjust their work. This may include, where necessary, changes in AWQMPs and/or rules, as well as targeted investments through partners including the Oregon Watershed Enhancement Board (OWEB) and the federal Natural Resources Conservation Service (NRCS).

ODA and DEQ work together under a Memorandum of Agreement to prioritize and coordinate their work. DEQ provides scientific analysis and regular review, including status and trend information, of the data from water bodies within these agricultural lands to inform, progress toward meeting these outcomes and any needed changes to area rules and plans, including adaptive management of overall approaches or priorities for action.

The Oregon Department of Agriculture is also responsible for implementing the Confined Animal Feeding Operations Program, under agreement with DEQ and EQC. Under a formal Memorandum of Understanding, DEQ and ODA jointly issue CAFO permits to livestock owners so manure does not pollute ground or surface water. ODA maintains the responsibility for inspecting these facilities, which are primarily cattle operations. Nearly all of the 513 current CAFO permits in Oregon are general permits, which means the permit conditions are the same, including the inspection schedule of once every 10 months. Five CAFO permits are individual permits, with additional conditions or other customized terms, including an inspection schedule of four times per year for these facilities.

DEQ and ODA are also partners in several programs, both regulatory and voluntary, related to pesticide use. These programs protect Oregon's waters from pollution from pesticides, fungicides and rodenticides used to control pests on agricultural lands. Excess pesticides, either through runoff, drift, or misapplication and overspray, can contaminate Oregon's surface and ground waters.

EQC involvement

There is no EQC action associated with this joint agenda item. DEQ will continue to provide opportunities for the commission to meet and consult with other state boards and commissions relevant to the work of EQC and the protection of Oregon's environment.

Supporting materials

A. DEQ's Water Quality Program homepage: https://www.oregon.gov/deq/wq/Pages/default.aspx
B. Board of Agriculture Program Factsheets
C. ODA/DEQ MOA
D. ODF/DEQ MOU

Report compiled from agency information

Agricultural Water Quality Program Implementation

The Oregon Department of Agriculture (ODA), Agricultural Water Quality Program works with Oregon agriculture to achieve water quality goals through both regulatory and voluntary strategies. ODA and the Oregon Department of Environmental Quality (DEQ) are partners in these efforts.

ODA's regulatory work ensures compliance with local water quality rules. ODA also relies on partnerships with agencies and organizations who collaborate with farmers and ranchers to implement voluntary conservation measures. These voluntary efforts, in addition to regulatory compliance, are needed to achieve Oregon's water quality goals.

There are 38 Agricultural Water Quality Management Area Plans (Area Plans) in Oregon. These Area Plans are based primarily on watershed boundaries. Each Area Plan has a Local Advisory Committee (LAC) made up of local agricultural producers and other interests. These Area Plans provide the basis for the voluntary and regulatory expectations to prevent water pollution from agricultural activities. ODA works directly with Oregon's Soil and Water Conservation Districts (SWCDs), DEQ, other state and federal agencies, and LAC to review and update the Area Plans every two years.

ODA and DEQ work together closely to implement the program. Below are key roles for each agency as well as some ways that we work together.

a. ODA is the lead agency to implement the program in Oregon and conducts all on-the-ground regulatory work.

b. DEQ provides scientific analysis of water quality and other data to support adaptive management in the program. DEQ participates in LAC meetings and biennial reviews of Area Plans, and provides water quality Status and Trends analysis for all Area Plan updates.

c. ODA and DEQ work collaboratively through a Memorandum of Agreement (MOA), intended to assist each agency in meeting their legal responsibilities relating to agricultural non-point source pollution, including DEQ mandated Total Maximum Daily Load (TMDL) achievement.

d. The ODA/DEQ management and staff work closely on related agricultural water quality efforts such as water quality monitoring consultation and other technical and scientific analysis for identification of opportunities to improve water quality.

e. ODA and DEQ work together in each Strategic Implementation Area as part of an interagency team that also collaborates with local partners and farmers. DEQ provides input on priorities for Strategic Implementation Areas, both at the statewide and watershed level.

Confined Animal Feed Operations (CAFO) Program

As part of protecting Oregon's natural resources, the Oregon Legislature established a special regulatory program for Confined Animal Feeding Operations (CAFO) in 1989. The legislation required the Oregon Department of Environmental Quality (DEQ) to issue CAFO permits and directed ODA to inspect CAFO facilities. In 1993, the CAFO statutes were amended to direct the Environmental Quality Commission (EQC) and ODA to enter into a formal memorandum of understanding (MOU). The MOU authorizes ODA to perform the CAFO related functions of DEQ and the EQC. ODA has continued to operate the CAFO Program in concert with DEQ under this MOU. The most current CAFO Program MOU was signed on December 23, 2015 and expires December 31, 2020.

The ODA and DEQ jointly issue CAFO permits to livestock owners so manure does not pollute ground or surface water.

There are two different types of l CAFO General Permits in Oregon.

- National Pollutant Discharge Elimination System (NPDES) permit which is a federal permit and
- Water Pollution Control Facility (WPCF) which is a state permit

ODA conducts all of the Permit registrations, facility inspections, compliance activities as well as education and technical assistance regarding CAFOs. Currently, there are 513 CAFOs permitted in Oregon (378 NPDES permits and 135 WPCF permits, including general and individual permits).

The most common permitted facilities in the state are dairy operations, followed by cattle operations but dog kennels often also require a CAFO permit as does the Wildlife Safari in Douglas County.

CAFO Breakdown		
CAFO Permit Size	**Number of total permits all species**	**Number of beef animal permits**
Small	178	21
Medium	212	66
Large	123	40
TOTAL	**513**	**127**
CAFO permit size for beef farms	Number of beef animal permits	
Small	Less than 300	
Medium	300-999	
Large	1000 or more	

ODA has 6 inspectors and 3 technical and management staff in the CAFO program and conducted 741 inspections of all types with CAFOs in calendar year 2018. The goal of the CAFO program is to inspect each permitted operation once every 10 months to ensure a facility is being inspected during different seasons.

In addition to the general NPDES and WPCF permits, the program also issues individual permits which gives the state the ability to customize the permit for the operation. Typically, an individual permit is issued instead of the general permit when the operation has had a history of compliance issues, is utilizing experimental technology, or is located in an environmentally sensitive area. There are currently 5 individual permits in Oregon and those facilities are inspected four times a year.

Oregon Department of Agriculture Pesticides Program

Oregon Department of Agriculture (ODA) Pesticides Program Working Together with Department of Environmental Quality (DEQ) on Program Implementation

ODA is the state lead agency responsible for the Oregon Pesticide Control Law (ORS 634).The Pesticides Program is responsible for registering pesticide products for sale, use and distribution; as well as the certification and licensing of pesticide applicators. The program is also responsible for conducting investigations including complaint driven investigations and routine compliance monitoring . ODA has delegated authority from US EPA to enforce the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) in Oregon.

The program maintains a cooperative agreement with the US EPA and routinely interacts with DEQ staff on cross program pesticide related issues including pesticide use in waterways, such as herbicide applications to channels for aquatic weed control; pesticide and water quality issues; and pesticide disposal, including voluntary pesticide disposal events and pesticide disposal issues of regulatory concern. The program provides a comprehensive enforcement program to ensure compliance with state and federal pesticide laws and regulations.

In partnership with Oregon State University and other state agencies, ODA's Pesticide Program staff as well as Water Quality staff are highly engaged in educational outreach efforts regarding label interpretation, worker protection, water quality, pollinator protection and endangered species issues. ODA Pesticides Program is a founding member of the Oregon Bee Project, and participates in the development of grower initiated standard operating procedures (SOPs) to protect pollinators. The program worked in conjunction with OHA to develop a list of pesticides that are legal to use on cannabis, and educate both hemp and marijuana growers about the legal use of pesticides.

In addition, program staff oversee the development and implementation of the Pesticide Management Plan (PMP) as stipulated in the annual EPA and ODA Consolidated Pesticide Cooperative Agreement. The Water Quality Pesticide Management Team (WQPMT), an interagency team, composed of representatives from several agencies, including DEQ, was formed to protect Oregon water ways from pesticide contamination. The program works with DEQ to implement the Pesticide Management Plan, as well as the Pesticide Stewardship Partnership (see the Pesticide Stewardship Partnership Implementation white paper).

The Pesticide Programs Certification and Licensing staff also work with DEQ staff to help develop study material for pesticide examinations to ensure applicators know how to properly dispose of pesticide wastes. ODA continues to feature DEQ written articles in our biannual Pesticides Bulletin (newsletter) about protecting water quality, including wellheads.

Oregon Pesticide Analytical Response Center

The Pesticide Analytical and Response Center (PARC) was created by executive order in 1978 and was reauthorized under the Oregon Department of Agriculture (ODA) as ORS 634.550, in 1991. PARC serves as a single point of contact for anyone who wishes to report a pesticide incident or concern. Calls to PARC are accepted 24 hours a day via 211info, and receive a response from PARC within one business day.

PARC's primary functions are to coordinate investigations and collect and analyze information about reported incidents. Member agencies conduct investigations and take any necessary enforcement action(s). The eight-member agencies include the following: Oregon Health Authority (OHA), Oregon Department of Fish and Wildlife (ODF&W), Oregon Department of Environmental Quality (DEQ), Oregon Department of Forestry (ODF), Oregon Occupational Safety and Health Administration (OR OSHA), Office of the State Fire Marshal (SFM), Oregon Poison Center (OPC), Oregon Department of Agriculture (ODA). Inter-governmental agreements (IGAs) between PARC and each member agency details how PARC and the member agencies will coordinate pesticide-related investigations.

PARC also enjoys a relationship with consultants from the Oregon Department of Transportation, and toxicology consultants from both the Oregon Health and Sciences University, and Oregon State University.

PARC is mandated to perform the following activities with regard to pesticide-related incidents in Oregon that have suspected health or environmental effects: Collect incident information, mobilize expertise for investigations, identify trends and patterns of problems, make policy or other recommendations for action, report results of investigations, and prepare activity reports for each legislative session.

ODA and DEQ work together closely on the PARC board. Below are some of the main ways the agencies work together to conduct PARC's work.

- The ODA PARC coordinator refers cases to DEQ according to PARC Standard Operating Procedures. Cases are referred to DEQ whenever there is a possible violation of the general pesticide permit, potential impacts to a drinking water source or ground water, or improper disposal of solid waste containing pesticides.
- DEQ has consulted with ODA-PARC during the recent update of its SOPs.
- DEQ participate as appropriate on interagency coordination calls regarding PARC cases and in after-action reviews.

Pesticide Stewardship Partnership Implementation

The Pesticide Stewardship Partnership (PSP) approach uses local expertise combined with water quality sampling results to promote voluntary changes in pesticide use practices that result in improvements to water quality that benefit human health and aquatic life. Several agencies, including the Oregon Department of Agriculture and the Oregon Department of Environmental Quality, collaborate with local partners to implement the program. The partner state agencies participate on a Water Quality Pesticide Management Team (WQPMT) to provide technical guidance on program implementation.

There are currently nine designated PSP areas in Oregon. These partnerships are formed between the Water Quality Pesticide Management Team and local watershed councils, soil and water conservation districts, grower groups, OSU and other stakeholder organizations. The partnerships use both water quality and crop quality data as measures of success. Pest management and water quality protection must both be effective for long-term stewardship of natural resources. The nine current PSP areas are:

Amazon (Eugene) Clackamas Hood River Middle Deschutes Middle Rogue (Medford) Pudding (Marion County) Walla Walla Wasco (The Dalles) Yamhill (McMinnville)

The newest PSP is the Middle Deschutes located in northern Deschutes County (Spring 2019). The Middle Deschutes began as a water quality study supported by both the Jefferson County Soil and Water Conservation District and the local Watershed Council. Following the collection and analysis of three years of data, the District and Council agreed that the pesticide issues discovered warranted the focused attention that a PSP would bring to the watershed.

In 2017, the PSP began work with a select number of PSP areas to develop area focused Strategic Implementation Plans that would guide the implementation of PSP activities moving forward these plans will include:

a. Watershed monitoring strategies
b. Designation of pesticides of most concern (prioritization for management)
c. Goals for success
d. Pesticide management options (both physical and education/outreach)
e. Options for addressing future pesticide needs (based on new pest pressures)
f. Plans for future funding

In September 2019, the Middle Rogue will have completed the first of these plans. In the 2020-21 biennium, Amazon, Clackamas, and Walla Walla will begin working on their Strategic Plans.

Beginning in the Fall of 2019, a stakeholder advisory group will be formed provide input to the WQPMT and to assist in addressing pesticide issues related to the PSP program.

ODA and DEQ work together closely to implement the program. Below are key roles for each agency as well as some ways that we work together.

- *ODA contracts with DEQ to conduct lab analyses for pesticide water quality samples from each PSP area as well as prospective PSP areas.*
- *ODA administers grants to local organizations in each PSP area as well as to grant recipients who are conducting work at the state level to address pesticide and water quality issues.*
- *ODA and DEQ work together with local partners to conduct education and outreach about strategies to reduce pesticides in the water in each PSP area.*
- *ODA and DEQ conduct data analyses to evaluate effectiveness at the local area and programmatic level, and identify adaptive management strategies. This activity is coordinated with the other WQPMT agencies.*
- *ODA and DEQ work together to support partners in data collection and audit field sampling techniques to insure adherence with approved QA/QC protocols*

MIDDLE DESCHUTES

Pesticide Stewardship Partnership
2017 Pilot Project Summary

History: In 2014, the Pesticide Water Quality Management Team approached the Jefferson Soil and Water Conservation District and the Middle Deschutes Watershed Council about conducting water quality monitoring for pesticides in several areas of the watershed. In cooperation with the SWCD and WC, several sites were selected and monitoring began. The results of that monitoring indicated that there were some waterbodies within the watershed that were potentially impacted by pesticide residues and very few pesticide detections were observed in other streams. Based on the 2014 monitoring results a second round of water sampling began in 2017, and it focused on areas previously impacted by pesticide residues. The second round of water sampling included the addition of a site in the southern part of the watershed established to evaluate agricultural impacts in the Culver area. The results of the latest monitoring indicate the potential need for the establishment of a more formal PSP in some sub-watershed areas within the Middle Deschutes watershed basin.

Water Quality Monitoring Locations 2017

Land Use: The Middle Deschutes PSP Pilot Project encompasses 1,100 square miles. Primary crops grown within the watershed include hay, alfalfa and grass hay, but also include unique specialty crops such as carrot seed, garlic, peppermint oil and tea. The largest city within the watershed is Madras, with a population of 6,730 (2016 US Census estimates). Based on 2011 National Land Coverage Data (NLCD), the breakdown of land use in the watershed is 77.4% other, 13.3% forest, and 6.9% agriculture and 2.3% urban. The "other" land-use classification includes rangeland and scrublands.

Pesticide Monitoring: Water quality monitoring begins in March and continues through June (and again in September and continuing through October. During the period March 20, 2017 through October 30, 2017, water quality samples were collected from five locations. The five monitoring locations assessed water quality from predominately agricultural land use.

WATER QUALITY MONITORING STATIONS 2017

Station ID	Map Number	Description	Predominate Land Use	No. Detections	BM* Exceedances
34797	1	Mud Springs Creek at Gateway	Agriculture	32	3
35226	2	Campbell Creek at Highway 26	Agriculture	87	13
36776	3	Trout Creek D.S. of Mud Springs Creek	Agriculture	1	0
37635	4	Campbell Creek at Mouth	Agriculture	105	7
38827	5	Culver Drain at Crooked River C.G.	Agriculture	16	2

**BM = US EPA Aquatic Life Benchmark for pesticides. Note: Statistics include WQ monitoring from July 1, 2017-October 30, 2017*

WATER QUALITY DATA SUMMARY FOR ALL SAMPLE LOCATIONS 2017

Pesticide	Type	Benchmark Value µg/L	No. of Analysis	No. of Detections	Max. Conc. µg/L	Average Conc. µg/L	Percent Detections	Percent of Benchmark (Max. Conc.)
2,4-D	H	299.2	10	1	.1	.01	10	0
Acephate	I	150	24	1	.07	.003	4.2	0
AMPA	M	249500	10	9	.67	.2	90	0
Azoxystrobin	F	44	24	13	.19	.045	54.2	.4
Bromacil	H	6.8	39	1	.33	.0085	2.6	4.9
Chloropyrifos	I	.041	39	6	2.15	.073	15.4	5244
Cycloate	H	1200	39	2	.049	.0024	5.1	0
Dacthal (DCPA)	H	11000	39	8	1.58	.035	20.5	0
DCPA Acid Metabolites	M	75	10	2	.003	.0005	20	0
Dimethenamid	H	8.9	39	19	4.25	.26	48.7	47.8
Dimethoate	I	.5	39	8	2.31	.11	20.5	462
Diuron	H	2.4	39	31	2.2	.223	79.5	91.7
Ethoprop	I	.8	39	1	.07	.02	2.6	8.7
Glyphosate	H	1800	10	7	.49	.132	70	0
Hexazinone	H	7	39	3	.105	.006	7.7	1.5
Imazapyr	H	18	39	1	.197	.0051	2.6	.8
Imidacloprid	I	.01	39	2	.056	.0022	5.1	557
Linuron	H	.09	39	29	2.93	.0202	74.4	3256
Metolachlor	H	1	39	5	2.95	.078	12.8	295
Metribuzin	H	8.1	39	12	.913	.029	30.8	11.3
Oxyfluorfen	H	.33	39	8	.0704	.0106	20.5	24.3
Pendimethalin	H	5.2	39	21	2.62	.115	53.8	50.4
Prometon	H	98	39	3	.0078	.00047	7.7	0
Prometryn	H	1.04	39	20	.892	.055	51.3	85.8
Pronamide	H	NA	39	3	.0911	.00426	7.7	
Propiconazole	F	21	39	20	.71	.0694	51.3	3.4
Terbacil	H	11	39	1	.0254	.00065	2.6	.2
Trifloxystrobin	F	2.76	24	3	.0463	.0041	12.5	1.7

Pesticides highlighted in red are of high concern, pesticides highlighted in yellow are of moderate concern based upon frequency of detection and maximum detected concentration during the period July 1, 2015 through June 30, 2017 as compared to the US EPA aquatic life benchmark.
F = fungicide, H = herbicide, I = insecticide, M = metabolite (breakdown product), NR = Not Registered

Water quality monitoring indicated the presence of a significant number of pesticides a majority is attributed to agricultural land use within the Campbell Creek sub-watershed. While there were a number of detections at the Culver Creek and Mud Springs monitoring sites, the number of pesticide benchmark exceedances was significantly lower than the Campbell Creek monitoring locations. Detections of the insecticide chlorpyrifos and herbicides diuron, linuron, metolachlor, and prometryn are at levels of concern within this area.

COMPARISON OF ANALYTICAL RESULTS 2014 AND 2017 MONITORING

Station Number	2014 Detections	Number of BM Exceedances	Number of Individual Pesticides	2015-17 % Detections	Number of BM Exceedances	Number of Individual Pesticides
34232	39.1	23	35	38.6	31	41
34234	28	3	31	22	15	30
34235	52	3	17	26	14	30
37639	44	17	31	37.7	22	37
37640	38	1	25	34.3	5	27

The detections of pesticide residues, especially in at the Campbell Creek monitoring site, are likely the result of significant runoff in agricultural fields higher up in the watershed. Turbidity is monitored by the Soil and Water Conservation District and are high and remain so during the spring and fall irrigation periods.

Detections of the herbicide dacthal (DCPA) in surface water may have implications to groundwater quality especially in soil type similar to that in the Middle Deschutes watershed. Detections of this herbicides metabolite in groundwater has occurred throughout the Pacific Northwest[1] in groundwater at levels above the current federal health advisory limit (75 µg/L) where dacthal is or has been used. At this time, there has been no groundwater data collected in the area that would confirm or deny the presence of the metabolite.

PESTICIDES OF CONCERN DETECTED IN THE MIDDLE DESCHUTES PILOT STUDY

Pesticide	Examples of Trade Names[2]	Pesticide Classification
Chlorpyrifos	Dursban, Lorsban	Insecticide
Dimethenamid	Outlook, Tower	Herbicide
Dimethoate	Cygon, Dimate,	Insecticide
Diuron	Direx, Karmex	Herbicide
Imidacloprid	Admire, Gaucho, Premier, Provado	Insecticide
Linuron	Linex, Linurex, Premalin	Herbicide
Metolachlor	Bicep, Dual, Pennant	Herbicide
Oxfluorfen	Goal, Koltar	Herbicide
Pendimethalin	Prowl, Herbadox	Herbicide
Prometryn	Caparol, Promet, Primatol Q	Herbicide

Detection of Metabolites: Metabolites are "breakdown" products of some pesticides. They occur generally after the original pesticide has undergone chemical change due to interactions with the environment or soil microbes. One metabolite aminomethylphosphonic acid (AMPA) was detected at frequencies above 20%.

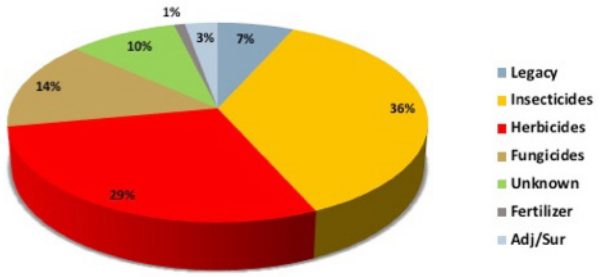
Aminomethylphosphonic acid (AMPA) is a metabolite of the herbicide glyphosate. Glyphosate is sold under a variety of names. It has an established EPA aquatic life benchmark of 249500 µg/L (this high benchmark indicates a realitively low toxicity to aquatic life). At this time, EPA has not established a human health benchmark.

Projects Funded and Improvements Made: The Middle Deschutes pilot project is in the second year of assessment. Based on the results of the water quality monitoring, it would appear that the area could benefit from the establishment of a Pesticide Stewardship Partnership at least in the northern areas of the watershed. At this time, the WQPMT will begin assessing the potential for the establishment of a partnership group that would be willing to sponsor the formation of a PSP. This would likely include both the SWCD and the local watershed council. During the 2015-17 biennium the SWCD received $2,500.00 to conduct water quality monitoring, that funding has continued in to the 2017-19 biennium.

Beginning in 2018, flow measurement was begun at all currently active monitoring sites. In late 2018, it will be possible to begin analysis of pesticide loading. An analysis of loading and turbidity will be conducted to determine the relationship between the two parameters.

[1]This includes Malheur County in Oregon, The City of Quincy and Walla Walla in Washington, and areas near Homeland, Idaho
[2]Trade names presented are common examples used in Oregon and do not represent all current existing names for the pesticide

Waste Pesticide Collection: On February 2, 2017 a waste pesticide collection event was held in Madras. Approximately 7,600 pounds of material was collected at a cost of $14,000.00. In addition to pesticides that are currently registered for use but may have had container damage or were no longer needed by the applicator, a significant amount (350 pounds) of banned material was collected including DDT. A significant number of participants indicated that material that was brought to the collection event had been stored in old sheds or were discovered when the property changed owners.



Madras Waste Pesticide Collection Event 2/2/17

Memorandum of Agreement

Between

Oregon Department of Agriculture

And

Oregon Department of Environmental Quality

Relating to Agricultural Nonpoint Source Pollution

I. Purpose

The Oregon Department of Environmental Quality (DEQ) is the primary agency responsible for implementing the federal Clean Water Act (CWA), 33 United States Code Section 1251 et. seq. and general state water quality laws found in Oregon Revised Statute (ORS) chapters 468 and 468B. This includes the responsibility for establishing and revising water quality standards under CWA Section 303(c) and Oregon Administrative Rule (OAR) chapter 340, division 41, developing the Nonpoint Source (NPS) Control Program required under CWA section 319, and issuing (and ensuring the implementation of) Total Daily Maximum Loads (TMDLs) under CWA Section 303(d) and OAR chapter 340, division 42, for those surface waters that fail to meet water quality standards. The CWA requires effective public participation for all CWA programs, including those relating to standards, NPS pollution control and TMDLs.

The Oregon Department of Agriculture (ODA) is the agency responsible for implementing the Agricultural Water Quality Management Program established under ORS 568.900 to 568.933 and ORS 561.191, and OAR chapter 603, divisions 90 and 95. The ODA Agricultural Water Quality Management Program achieves the goals of these statutes and rules by implementation of ORS 468B within its jurisdiction. It is also the program used to implement load allocations for agricultural nonpoint source pollution assigned under TMDLs issued pursuant to CWA Section 303(d). OAR 340-042-0080.

This memorandum of agreement is intended to assist DEQ and ODA in collaborative efforts to meet their legal responsibilities relating to agricultural nonpoint source pollution, and to help ensure that the agencies fulfill their respective obligations in an effective and efficient manner. This, in turn, furthers the state's objectives to protect water quality and the public's use and enjoyment of this resource.

The two agencies also have regulatory authority and responsibilities with respect to ground water protection and certain agricultural point sources. These programs are not addressed in this agreement.

II. Adoption and Revision of Water Quality Standards

DEQ, acting through the Environmental Quality Commission (EQC), must establish water quality standards to protect designated and existing beneficial uses. DEQ must review and revise the standards periodically. Water quality standards must be adopted as rules by the EQC and approved by the U.S. Environmental Protection Agency (EPA).

DEQ will advise ODA staff and agricultural stakeholders of the water quality standards revision process and invite them to attend and participate in advisory committee meetings.

III. Implementation of the Section 319 Program

Under the Clean Water Act, the objective of the Section 319 Nonpoint Source Program is to identify "best management practices and measures to control each category and subcategory of nonpoint sources and… to reduce, to the maximum extent practicable, the level of pollution resulting from such category, subcategory, or source…" Oregon's Section 319 program is documented in the Oregon Nonpoint Source Program Plan which is periodically updated by DEQ and approved by EPA.

In Oregon, Agricultural Water Quality Management Area Plans (area plans) and Agricultural Water Quality Management Area Rules (area rules; also referred to as Prohibited Conditions) are intended to be the implementation measures for Section 319 with respect to agriculture.

When revising Oregon's Nonpoint Source Program Plan, DEQ will seek input from ODA on elements that relate to agricultural land uses.

IV. TMDL Development and Implementation

Oregon Administrative Rules Division 42, Total Maximum Daily Loads (TMDLs), describe the TMDL process including establishing and implementing Load Allocations (LAs) for nonpoint sources. Division 42 and DEQ's TMDL Internal Management Directive provide detail as to how load allocations are developed and implemented. Where adequate information is available, LAs may be established at smaller geographic scales to guide implementation efforts. In some cases, LAs are expressed in terms of targets or surrogates.

When developing or revising a TMDL, DEQ will form a local TMDL stakeholder committee with broad representation of, and experience and interest in, the geographic area to provide input on TMDL development and implementation. DEQ works with TMDL Advisory Committees to determine how to allocate pollutant loads to point and nonpoint sources.

DEQ will request representation from ODA and the Agricultural Water Quality Management Area (management area) Local Advisory Committee(s) (LAC) for the TMDL Advisory Committee. DEQ will advise the relevant ODA staff and Local Management Agencies (LMA)

of TMDL Advisory Committee meetings and will encourage them to attend and participate in these meetings.

DEQ will work with ODA to ensure that appropriate LAs for agricultural NPS sectors are established.

V. Monitoring and Evaluating Effectiveness of Area Plans

ODA will develop and implement a monitoring strategy for the Agricultural Water Quality Management Program as resources allow, in consultation with DEQ. The strategy will include activities to evaluate the effectiveness of area plans and rules and of the Agricultural Water Quality Management Program, including ambient water quality monitoring, land condition monitoring, conservation practice implementation monitoring, and monitoring of other plan implementation activities such as education and outreach.

ODA will evaluate area plan and rule implementation effectiveness, in collaboration with DEQ. To support the evaluation,

- ODA will determine the percentage of lands achieving compliance with the area rules.
- ODA will determine whether the target percentages of lands meeting desired land conditions, as outlined in the goals and objectives in the area plan, are being met.

The agencies will review and evaluate existing information with the objective of determining:

- Whether additional data are needed to conduct an adequate evaluation.
- Whether goals and objectives need to be revised to facilitate better measuring of progress.
- Whether existing strategies have been effective in achieving the goals and objectives of the area plan.
- Whether the rate of progress is adequate to achieve the goals of the area plan. Achievement of area plan goals will occur consistent with legislative direction to achieve water quality standards and within the time frames established under TMDLs.
- Whether existing prohibited conditions, and compliance activities to implement those conditions, are sufficient to implement the area plan.
- Whether additional prohibited conditions or other mandatory control measures are needed. This evaluation will occur in accordance with OAR 603-090-0000 through 603-090-0120.

The agencies will coordinate monitoring and reporting efforts to evaluate land conditions and water quality trends, and whether agricultural load allocations are being addressed.

If the agencies determine, after the above review process, that TMDL agricultural load allocations may not be appropriately set, then DEQ working with ODA will re-evaluate the allocation attributed to agriculture utilizing the existing TMDL review procedures.

VI. Area Plan Review and Modification

The biennial review process described below includes consultation with Local Advisory Committees, as described in OAR 603-090-0000 to 603-090-0120.

Area plans rely on a combination of voluntary and regulatory measures to prevent and control water pollution from agricultural activities and soil erosions. Area plans and rules are reviewed every two years for sufficiency and revised as appropriate to satisfy the requirements under the Clean Water Act and Oregon state law.

To achieve the above objectives and prior to the biennial review of an area plan,

- The LAC may meet as often as necessary to review progress and recommend strategies for implementation.
- ODA will notify DEQ regional and headquarters staff and request review and comment on the area plan. ODA will invite DEQ regional staff to participate in each of the LAC biennial review meetings.
- ODA and DEQ will review and evaluate available monitoring and implementation information as described in Section V and provide the results of this evaluation to the LAC.
- The LAC, in collaboration with ODA, will evaluate the area plan, determine whether the area plan and rules need to be modified to meet statutory and rule requirements, and propose modifications for discussion with DEQ.

During the biennial review process,

- The LAC is responsible to recommend strategies necessary to achieve water quality goals and objectives outlined in the agricultural water quality management area plan.
- In consultation with the LAC, ODA is ultimately responsible to revise the area plan, area rules, and/or implementation as needed to achieve the goals of the area plan and water quality standards within the time frames established under TMDLs.

DEQ's role in the biennial review process will be as follows.

- DEQ will review available data for water quality trends and whether waterbodies are achieving water quality standards and meeting TMDL agricultural load allocations.
- DEQ will review the area plan and working with ODA will recommend any changes or additions necessary to achieve water quality standards and meet TMDL agricultural load allocations.
- DEQ will evaluate and provide comment to ODA on the suitability of landscape conditions to achieve TMDL agricultural load allocations.

DEQ review is not limited to scheduled biennial reviews and DEQ may provide comments to ODA at any time on any area plan and rules.

In collaboration with DEQ, ODA will ensure milestones and timelines included in each management area plan achieve the goals of the area plan. This work could occur during, but is not limited to, the biennial review process.

At the conclusion of the biennial review process,

- The LAC is responsible for completing a biennial report that includes an evaluation of progress and identifies impediments toward implementation of an Area Plan. The report will also include the LAC's and DEQ's recommendations for modifications to the area plan necessary to ensure effectiveness of the Area Plans over time, and ODA's modifications to the area plan and rules.
- ODA will notify DEQ and will post the biennial report and modifications to the area plan on the ODA website.

VII. Interagency Coordination and Dispute Resolution

Should disagreements occur, DEQ and ODA are committed to work together with the intent to resolve issues at the lowest levels in a timely manner. In the event that issues cannot be resolved at the lowest levels, staff and managers will raise the issue to the director level. If DEQ believes that an area plan and associated rules are not adequate to achieve and maintain TMDL agricultural load allocations, DEQ will provide ODA with comments on what would be sufficient to meet TMDL agricultural load allocations. ODA will modify the Area Plan and Rules and implementation activities as needed to address the comments. If a resolution cannot be agreed upon, DEQ will request the Environmental Quality Commission (EQC) to petition ODA for a review of part or all of the area plan and rules.

VIII. Amendment and review

The agencies will review the agreement every five years. No amendments may be made to this agreement without the express written agreement of both parties. Such agreement will be signed by the Directors of each agency.

Katy Coba, Director
Oregon Department of Agriculture

Date: 5-17-12

Dick Pedersen, Director
Oregon Department of Environmental Quality

Date: 5-17-12

MEMORANDUM OF UNDERSTANDING BETWEEN THE OREGON STATE DEPARTMENT OF ENVIRONMENTAL QUALITY AND THE OREGON STATE DEPARTMENT OF FORESTRY

I. Introduction and Statement of Purpose

A. Introduction

1. The Environmental Quality Commission (EQC) and the Oregon Department of Environmental Quality (DEQ) are responsible for implementing the Federal Clean Water Act in Oregon, ORS 468B.035, including adoption of water quality standards. The DEQ has adopted and the U.S. Environmental Protection Agency (EPA) has approved Oregon's water quality standards and its 1994/1996 303(d) list. DEQ intends to update and resubmit its 303(d) list to EPA in 1998 and subsequent years as required by federal regulations. DEQ is setting priorities for TMDL preparation.

2. Subsection 303(d) of the Federal Clean Water Act (the Act), 33 U.S.C. §1313(d), requires states to identify waters for which effluent limitations or other pollution control requirements required by local, State, or Federal authority are not stringent enough to implement applicable water quality standards, 40 C.F.R. §130.7 (b). These water bodies are referred to as "water quality limited." For each water on the 303(d) list that is not removed from the list by findings of water quality impairment due to natural conditions or best management practice (BMP) effectiveness, the state must establish a total maximum daily load (TMDL) allocation at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality. A TMDL is the sum of the individual wasteload allocations for point sources and load allocations for non-point sources and natural background, 40 C.F.R. §130.2(i).

3. TMDLs must be incorporated into the continuing planning process required by Section 303(e) of the Act and the continuing planning process must be included in the state's water quality management plan. Sections 208 and 319 of the Act, 33 U.S.C. §1288 and §1329, require the state to prepare non-point source management plans.

4. ORS 527.765 requires the Oregon Board of Forestry (the Board), in consultation with the EQC, to establish Best Management Practices (BMPs) and other rules applying to forest practices to ensure that to the maximum extent practicable non-point source discharges of pollutants resulting from forest operations do not impair the achievement and maintenance of water quality standards established by the EQC. The Oregon Department of Forestry (ODF) is the Designated Management Agency (DMA) by DEQ for regulation of water quality on nonfederal forestlands. Forest operators conducting operations in accordance with ODF BMPs are considered to be in compliance with Oregon's water quality standards.

5. The Board in consultation and with the participation and support of DEQ, has adopted water protection rules in the form of BMPs for forest operations, including, but not limited to, OAR Chapter 629, Divisions 635-660. These rules are implemented and enforced by ODF and monitored to assure their effectiveness. DEQ participates in the design and implementation of these monitoring efforts. The EQC, DEQ, the Board and ODF determined that pollution control measures required as BMPs under ORS 527.765 will be relied upon to result in achievement of state water quality standards.

6. The EQC, DEQ, the Board, and ODF are all committed to restoring salmon and meeting water quality through the Healthy Streams Partnership and Oregon Plan for Salmon and Watersheds, 1997 Oregon Laws, Ch. 7.

B: Purposes of MOU

The purposes of this memorandum of understanding:

1. To further define the respective roles and responsibilities of the EQC, the DEQ, the Board, and ODF in preventing, controlling and reducing non-point source discharges to achieve and maintain water quality standards;

2. To explain the process for determining whether (a) forest practices contribute to identified water quality problems in listed water quality limited streams; (b) if so, to determine whether existing forest practice rules provide sufficient control to assure that water quality standards will be met so that waters can be removed from the 303(d) list;

3. To describe the process for interagency coordination in revising forest practice rules, if necessary, to assure the achievement of water quality standards; and

4. To encourage the use of voluntary and incentive-based regulatory solutions to achieve and maintain water quality.

II. Forest Practice BMPs and Water Quality Standards

Since ODF is the DMA for water quality management on nonfederal forestlands and ODF's BMP's are designed to protect water quality, ODF and DEQ will jointly demonstrate how the Forest Practices Act (FPA), forest practice rules (including the rule amendment process), and BMP's are adequate protection pursuant to ORS 527.765. This demonstration of the ODF BMP program adequacy will be done at the statewide scale with due consideration to regional and local variation in effects including non-anthropogenic factors that can lead to water quality standard violations.

Water quality impairment related to aquatic weeds, bacteria, chlorophyll a, dissolved oxygen, flow modification, many nutrients, total dissolved gas, or toxics are generally not attributable to forest management practices as regulated by the FPA. However, it is generally accepted that forest management practices have in some cases caused documented changes in temperature, habitat modification, sedimentation, turbidity, and bio-criteria. Therefore, this statewide demonstration of FPA effectiveness in protection of water quality will address these specific parameters and will be conducted in the following order:

a. temperature (draft report target completion date Spring, 1999),
b. sedimentation and turbidity (draft report target completion date Summer, 1999),
c. aquatic habitat modification (draft report target completion date fall 1999),
e. bio-criteria (draft report target completion date end 1999), and
f. other parameters (draft report target completion date spring 2000).

The analyses will be presented in a format compatible with EPA region 10 guidance (pages 4-6, dated November 1995) regarding BMP effectiveness determinations, and will include:

a. "Data analysis of the effectiveness of controls relative to the problem": analyze relevant data and studies on the parameter and known control methods,
b. "Mechanisms requiring implementation of pollution controls": give a clear exposition of the rules/programs that are designed to provide for protection,
c. "Reasonable time frame for attaining water quality standards": discuss expected recovery times which may be long for some parameters because the ecological processes that bring recovery are long-term, and
d. "Monitoring to track implementation and effectiveness of controls": describe the scope and extent the effectiveness and implementation monitoring program and how they tie back to program changes for adaptive management.

In addition, these analyses will address attainment of state anti-degradation policy. These demonstrations will be reviewed by peers and other interested parties prior to final release. While analysis is being conducted and unless or until changes are made in accordance with ORS 527.765, the FPA and implementing rules will constitute the water quality BMP program for forestlands. These sufficiency analyses will be designed to provide background information and techniques for watershed based assessments of BMP effectiveness and water quality assessments for watersheds with forest and mixed land uses.

III. ODF and DEQ coordination for listed waterbodies (i.e., 303(d) list)

A. Waterbody Specific Coordination

The following coordination will occur between ODF and DEQ regarding the TMDL process and water quality management plans:

(a) For basins where agreement is reached that water quality impairment is not attributable to forest management practices (Figure 1), the forest practice rules will constitute the water quality compliance mechanism for forest management practices on nonfederal forestland. ODF will not participate in the development of the TMDL or water quality management plan except as requested to assist DEQ as ODF budgeted resources permit. If the basin associated with a listed waterbody is entirely or almost entirely on federal land or non-forestland ODF will have little or no involvement (Figure 1).

(b) For basins where water quality impairment is attributed to the long-term legacy of historic forest management and/or other practices, but ODF and DEQ jointly agree that the forest practice BMP's are now adequately regulating forest management activities and not adding to further degradation of water quality, the forest practice rules will be designated in the water quality management plan as the mechanism to achieve water quality compliance for forest operations. ODF will participate with the other DMAs in developing the water quality management plan as necessary.

(c) For basins where water quality impairment may be attributable to forest management practices and ODF and DEQ cannot agree that the current BMPs are adequately regulating forest management activities (Figure 1), the current forest practice rules will be designated in the water quality management plan as the mechanism to achieve water quality compliance for forest operations. However, ODF will design and implement a specific monitoring program as part of the basin plan to document the adequacy of the best management practices. The schedule and scope of the monitoring program will be jointly agreed to by DEQ and ODF. During the interim, while monitoring is being conducted, the current rules will constitute the water quality compliance mechanism. If the monitoring results indicate that changes in practices are needed in a basin, the DEQ and the Board will use OAR 629-635-120 to create watershed specific protection rules or use other existing authority to ensure that forest management activities do not impair water quality.

(d) For basins where both ODF and DEQ agree that there are water quality impairments due to forest management activities even with FPA rules and BMP's, the DEQ and the BOF will use OAR 629-635-120 to create watershed specific protection rules or use other existing authority to ensure that forest management activities do not impair water quality.

In deciding between conditions (a)-(d) above, the statewide rule sufficiency analysis (described in II) will be critical in determining which situation exists. If the practices and impairments are found by DEQ and ODF to be regional or statewide in nature the BOF will create or modify statewide or regional rules or design other effective measures to address the impairment.

B. Removal or Reclassification of Waterbodies

DEQ will propose removal of waterbodies (Figure 1) on the 303(d) list when:

(a) additional data indicates that the waterbody is not in violation,

(b) water quality parameters are found to be in violation for reasons other than human activities,

(c) TMDL's, or water quality management plans or their equivalents, have been established in compliance with the Clean Water Act §303, or

(d) the FPA, forest practice rules and BMP's are found to be adequate for a given water quality parameter in a given basin via the statewide demonstration or watershed based demonstration (see section II above) and all land affecting the listed waterbody is deemed forestland that is regulated under the FPA. Forest basins that have water quality impairment due to legacy conditions that will not be corrected by the current BMPs alone, remain listed with their present status until voluntary or incentive based actions are implemented that are intended to restore watershed conditions such that water quality standards can be met.

IV. Voluntary and Incentive-Based Approaches

DEQ and ODF will work jointly with landowners and watershed councils, as resources permit, to use innovative approaches to resolving water quality problems. DEQ and ODF will use other pollution control requirements when appropriate to restore watershed conditions such that water quality standards can be met in waterbodies listed under Section 303(d) of the Clean Water Act. These pollution programs include but are not limited to the following:

1. Oregon Laws 1997, ch. 553, The Green Permits Act,;
2. Oregon Laws 1995, ch. 413, The Forest Stewardship Act,;
3. Oregon Laws 1997, ch. 7, Healthy Streams Partnership and the Oregon Plan for Salmon and Watersheds;
4. DEQ's Environmental Management Systems Incentives Project;
5. Habitat Conservation Plans adopted and approved under the Endangered Species Act;
6. Project XL agreements with the EPA; and
7. Pollution Prevention Partnership agreements with the EPA.

Some of these alternative approaches will become critical and complementary to the forest practices program when attempting to restore water quality in streams with significant legacy

conditions caused by past actions such as channel simplification from splash damming and stream cleaning.

V. Other key coordination points for DEQ and ODF

There are two other issues that will require special coordination between DEQ and ODF These coordination issues regard:

1. Outstanding Resource Water designations and management measures, and
2. Coordination between the two agencies when there is a land use conversion.

Both agencies agree to open discussion on how to coordinate on these issues but they are separate issues that are not covered by this particular MOU.

VI. Signatures

Signed: James E Brown
James E. Brown, State Forester
Oregon Department of Forestry

Date: 4/16/98

Signed: Langdon Marsh
Langdon Marsh, Director
Oregon Department of
Environmental Quality

Date: 4-17-98

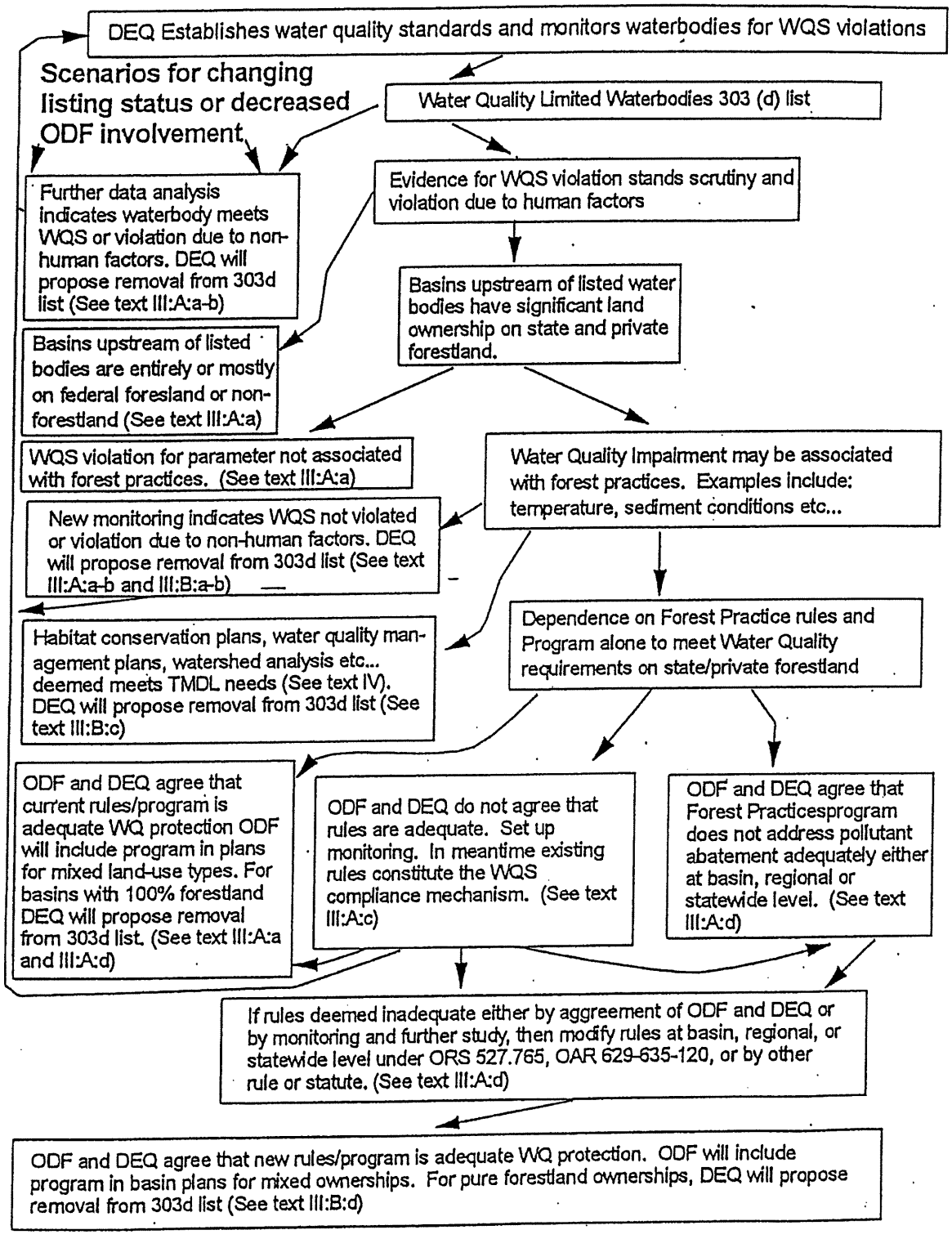


Figure 1. Treatment of waterbodies with forestland and mixed landuse and ownership lands listed as water quality limited under the 303(d) list